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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,128	01/07/2002	Harvey C. Eisenberg	MULDP0101US	1072
23908 7590 04/29/2009 RENNER OTTO BOISSELLE & SKLAR, LLP 1621 EUCLID AVENUE NINETEENTH FLOOR CLEVELAND, OH 44115			EXAMINER ROY, BAISAKHI	
			ART UNIT 3737	PAPER NUMBER
			MAIL DATE 04/29/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/039,128	Applicant(s) EISENBERG ET AL.	
	Examiner BAISAKHI ROY	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19-51 is/are pending in the application.
- 4a) Of the above claim(s) 2-8, 12, 13, 17 and 19-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 9-11, 14-16, 25-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of the appeal brief filed on 1/5/09, PROSECUTION IS HEREBY REOPENED. A new rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 9-11,14-16,25-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crosetto in view of Callerame et al. (20020031202).

Crosetto discloses an imaging system including a gantry, a patient support table, an x-ray source rotatable with respect to the gantry and the table, a detector array positioned to detect x-rays produced by the x-ray source, a collection system to acquire data received by the detector array, and a reconstruction system to process data acquired by the collection system (col. 23 lines 51 – col. 24 lines 7) , where the system is capable of operating in VCT, DR, PET and NM/SPECT modes of operation (col. 33 lines 22- col. 34). The system includes a scatter rejection device operatively connected to the configuration of the focused two-dimensional curved detector arrays and operable to reject those x-ray produced by the x-ray source or collimate single photon gamma rays when the system is in a NM/SPECT mode of operation, where said collimation device is operable to improve the spatial resolution, sensitivity and energy range of single photon gamma rays when the system is in a NM/SPECT mode of operation (col. 37 lines 11-27 lines 41-54, col. 61 lines 10-44).

The configuration of the two-dimensional curved detector arrays is positioned to minimize spatial resolution reduction from a central axis to the maximal axis regions of a pre-determined area (col. 50 lines 27-35). The reconstruction system uses data received by the collection system to reconstruct images from a helical volume spiral acquisition mode to produce whole body x-ray VCT volume images, where the reconstruction system selects data for helical spiral reconstructions, processing imaging data while utilizing redundant data (col. 38 lines 52-col. 39 line 4).

The imaging system includes an adaptive x-ray dose control system using data received by the collection system to optimize patient dosage and desired image quality

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and permit adaptive real-time dosage control during the image scanning process (col. 48 lines 42 – col. 49 lines 52). The imaging system permits continuous updating of the volume imaging data in real-time on interactive displays and includes in interventional image control system to control the acquisition of data by the collection system permitting production of substantially real-time images of invasive procedures on the patient (col. 42 lines 1-50).

The imaging system includes PET time stamping coincidence system for high count rate PET imaging, said PET time stamping coincidence system providing optimal coincidence digital time stamping of a positron generated gamma rays for real time randoms correction derived from average count rate adjustment and delay coincidence window rate (col. 60 lines 11-54). The imaging system includes a transmission attenuation system for whole body transmission attenuation correction, said attenuation system generating image projection corrections using VCT image and attenuation data (col. 37 lines 11-27, col. 38 lines 14-17, col. 61 lines 26 – col. 62 lines 52).

The imaging system includes a detector array which includes a configuration of focused two-dimensional curved detector arrays, wherein at least one gantry is comprised of a first gantry, a second gantry and a third gantry, said first, second, and third gantries being operatively attached to one another, where the configuration of focused two-dimensional curved detector arrays is comprised of a first configuration of focused two-dimensional curved detector arrays positioned to detect x-rays when the system is in VCT and DR modes of operation, a second configuration of focused two-dimensional curved detector arrays positioned to detect coincident gamma rays when

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the system is in PET mode of operation, and a third configuration of two-dimensional curved detector arrays positioned to detect gamma rays when the system is in a NM/SPECT mode of operation (col. 35 lines 52 – col. 38 line 50).

Crosetto teaches a scatter rejection device operatively connected to the configuration of the focused two-dimensional curved detector arrays and operable to reject those x-ray produced by the x-ray source or collimate single photon gamma rays when the system is in a NM/SPECT mode of operation, where said collimation device is operable to improve the spatial resolution, sensitivity and energy range of single photon gamma rays when the system is in a NM/SPECT mode of operation (col. 37 lines 11-27 lines 41-54, col. 61 lines 10-44). Crosetto however does not teach modulation of the x-ray source. In the same field of endeavor Callerame et al. disclose a system and method for inspecting an object with transmitted and/or scattered penetrating x-ray radiation [0006]. The system includes an x-ray source, a detector for detecting the penetrating radiation after interaction with the object, a modulator for modulating the incident penetrating radiation and a processor for deriving the position of irradiation (see claims). The x-ray source is modulated for assigning a signal to the x-ray produced by the respective modulated x-ray source where the x-ray source is modulated by different characteristic modulation frequencies [0023]. Callerame et al. also teach methods for demodulating the detected signal from the detector array [0024]. It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Callerame et al. to modify the system of Crosetto in order to effectively separate data

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arising from the detection of modulated x-rays from data arising from scatter from another x-ray source and therefore improve spatial resolution of the image [0027].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BAISAKHI ROY whose telephone number is (571)272-7139. The examiner can normally be reached on M-F (7:30 a.m. - 4p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN CASLER/
Supervisory Patent Examiner, Art
Unit 3737

BR
/B. R./
Examiner, Art Unit 3737

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